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ABSTRACT

The purpose of this study was to develop an evaluation instrument to assess young children's language communication skills. Two parallel sets of Language Communication Skills Tasks (LCST) were developed. Each task was developed to measure the effectiveness of the child's communication skills as both a speaker and listener. The subjects were 112 children from an inner-city public elementary school. Two sets of measures were derived. The first set dealt with communication measures and the second with the linguistic components. Detailed discussion of findings, procedures, and plans to revise and validate the LCST are presented in the paper. (Author)

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THE DEVELOPMENT OF A MEASURE TO EVALUATE LANGUAGE COMMUNICATION SKILLS OF YOUNG CHILDREN

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The Development of a Measure to Evaluate Language Communication Skills of Young Children

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It is generally agreed by the child development theorists and early childhood educators that the language development of young children is influenced by a multiplicity of factors. The results from a great number of past research studies coupled with field experiences suggest that the differences found in young children's verbal communication skills are attributed to more than just differences in such linguistic qualities as syntactic structure, vocabulary, and intelligibility. The differences in communication skills are strongly influenced by such factors as the child's ability to take the listener's role, his ability to order and classify relevant information, the nature and amount of feedback information supplied by the listener, and the appropriateness of the responses of the speaker to the feedback. (Piaget, 1926, Bernstein, 1961, Vygotsky, 1962, and Flavell, et al, 1968). The purpose of this study was to investigate the effectiveness of a technique developed to assess the characteristics of effective language communication behavior of young children.

The Language Communication Skills Task (LCST) was developed as a technique to study the nature of language communication among young children, and to assess the effectiveness of their language communication competencies. Language communication skill, for our purposes, is defined as the competencies required in effective inter-individual communications. Specifically, the LCST is designed as a technique to assess the quality

of inter-communication among young children. We are interested in studying the young child's ability to get meaning and ideas from his social-linguistic situations and to transmit these meanings and ideas to others, his response to language behaviors of others, and his ability to adapt his communicative input to achieve effective language communication with others.

Method

The Tasks:

Two parallel sets of communication tasks were developed. The tasks were developed to measure the effectiveness of the child's communication skills as both the speaker and the listener. The stimulus materials used in each communication task included two identical colored drawings of a familiar setting (a classroom scene for one set of tasks and a kitchen scene for the other set) mounted on 18x24 magnetic chalk boards. The scenes were selected on the basis of familiarity to the subjects. For each scene, two identical sets of objects were included. The objects were things one might logically find in the settings depicted on the picture board, and they were drawings mounted on cardboard cutouts with magnetic backing.

The task was designed to be administered to a pair of children at a time, with one playing the "message prescriber" role and the other playing the "message receiver" role. The presenter's job was to tell the receiver WHAT object to pick up, and WHERE on the scene of the receiver's picture board the object was to be placed. The receiver's job was to pick up each object as described by the presenter, and place it at the specified space on his picture board.

In performing the task, the pair of children were seated opposite each other with the identical picture boards set up in front of them. The boards are placed in such a way, that neither child could view the other's board. The presenter's board contained all of the objects in the appropriate place on the scene, while the objects for the receiver's picture board were displayed in an array on the table in front of the receiver. The players were not permitted to look at each other's picture nor use hand gestures. They could use language to inter-communicate as much as they needed prior to the placement of the object by the receiver on the appropriate location of his picture board. The receiver was permitted to ask for a more precise and more discriminating message, and the presenter was permitted to answer the questions verbally. See Appendix A for tester's manual for the description of test instructions.

The LCST was designed to assess language communication competencies of both the receiver and the presenter. It was designed to assess: (1) the encoding skills of the message presenter, including naming or explicitly describing the item the message receiver was to select, as well as the place and position in which the item was to be placed; (2) the ability of the message presenter to put all the relevant information together to communicate to the receiver, through the use of language alone, the message that would enable the listener to complete the task; (3) the ability of the message presenter to remember what communicative message he had already transmitted and what he still needed to encode to provide pertinent information to the receiver while encoding the next message, or the message for the next item included in the task; (4) the ability of the message presenter to recode the message during or prior to his presentation of the message, in order to provide the receiver with the necessary information to successfully decode the communicative input and perform

the task as presented; and (5) the ability of the message presenter in making use of the receiver's feedback information to recode his message to improve the communication quality -- his ability to adapt his message to the communicative input needs of the receiver, as indicated by the receiver's responses.

The LCST, in turn, assesses the message receiver's communication competencies in (1) decoding the presenter's message by identifying the item specified and placing the object in the correct location transmitted in the message; (2) communicating to the presenter any questions he may have for further clarification of the verbal message transmitted to him, and requests for additional information; (3) making use of his past experiences, his perception of the social linguistic situation, and his ability to assess precisely what additional information is needed from the presenter in order to successfully complete the task communicated to him; and (4) decoding the revised message sent by the presenter, performing the task, and sending a verbal message to inform the presenter that the task was completed.

Samples:

The subjects included in the study were randomly selected from three grade levels in an inner-city public elementary school located in Pittsburgh, Pennsylvania. The total sample was 112, they were: 38 kindergarteners, 32 first graders, and 42 second graders. The majority of the samples came from families of low SES status. The mean IQ score as measured by the Slossen Intelligence Test for the kindergarten group was 102.47, with a standard deviation of 13.44. The mean IQ for first grade was 102.33, with a standard deviation of 16.44. The mean IQ for the second grade was 93.86, with a standard deviation of 11.06.

Procedures:

The tasks were administered to one pair of children at a time, in a special area set up outside of the regular classrooms. Children were randomly paired within each grade level, and each pair of children worked on both sets of tasks in two separate sessions so that each child had a turn to play the presenter role with one set of tasks, and the receiver role with the other set. No time limit was set for the sessions. Each pair was given as much time as they needed to complete the tasks. Both children were instructed and encouraged to ask questions and request for further explanation from each other whenever they felt it was necessary. However, they were not permitted to look at each other's picture, nor use hand gestures; they could only "talk" to each other. The mean time per session was 25 minutes, with a range of 18-45 minutes. A tape recorder was used to tape the verbal protocols during each session. Transcription of the protocols for each pair inter-communication on both sets of tasks and the record of where each item is placed on the receiver's picture served as the basic set of data for analysis.

Measures:

Two sets of measures were derived from our analyses. The first set of measures dealt with communication competencies, and the second set of measures dealt with the linguistic competencies. Measures for evaluating the communication competencies were related to the performance of the task, that is, the successful completion of the communication tasks, and the measures for evaluating the linguistic competencies, are related to the use of language and language styles the child used in the communication process.

1. Communication measures:

Four different measures were used to assess the child's performance on the communication tasks. The presenter score represented the quality of the presenter's verbal command in giving the directions to the receiver. The presenter score was derived from three sub-scores which included: (1) the correct labelling and/or description of the item to be placed; (2) the correct labelling of the object on which it was to be placed; and (3) the exact position of that object. An example of a presenter's message which contains all criterion information would be "Put the turkey on the left side of the sink." The receiver score represented the quality of the receiver's ability to comprehend the direction given by the presenter. The receiver's sub-scores included: (1) selection of the correct item; (2) where to put it from the message transmitted by the presenter; and (3) the ability to question the presenter when sufficient information was not given.

To measure the communication outcomes of the pair, a pair score was claculated. The pair score represented the correct placement of the object by the receiver, based on the message transmitted by the presenter, whether the message was correct or not, according to the specification of the task. In other words, the pair score was a measure of how well the presenter and the receiver interacted regardless of presenter errors. The inter-communication score represented a measure of criterion behavior for the task, correct placement of the object -- according to the predetermined location on which the objects were to be placed on the picture board. This score represented a measure of the inter-communication adequacy of the pair. It was a measure of the criterion outcome of the task: the correct placement of the object by the receiver, which resulted from the use of the encoding and decoding skills of both the presenter and the receiver.

2. Linguistic measures:

Based on the transcriptions of the verbal protocols collected for the study, several measures to evaluate the linguistic quality of the content of the inter-communication was developed. The linguistic measures used included: (1) tokens, total number of words used, (2) type, total number of different words used, (3) token length, mean number of letters included per word for the total words used, (4) type length, mean number of letter per every different word used, (5) type-token-ratio, a measure of variability, (6) Yules K, a measure of repeativeness (Herden, 1970), and (7) utterance length, number of words included in a meaningful unit of verbalization preceeded and followed by a pause, it may or may not be a grammatical sentence. The linguistic measures are derived directly from computer analyses of the protocols (Maxwell, 1973).

Data Results

Communication Component

The reliability of the tasks was investigated using several different methods. A pilot study to estimate the test-retest reliability was conducted. Twelve first grade children (not included in the sample for the present study), served as subjects for the study. The classroom task was administered to the 12 children twice, a week apart. The children were randomly paired and randomly assigned to play the same role for both sessions. The percentage of agreement of the inter-communication score was calculated per each item. The mean percentage of agreement for the task was 89.3 with a range from 78.5% to 100%.

In addition to the small pilot test-retest reliability study, the split-half method and the parallel test method were used to estimate the reliability of LCST from the results of the present study. To obtain

the split-half correlation coefficient, the items included in the kitchen task (K) and the classroom task (C) were divided into equal halves, and the correlation coefficient between the scores obtained from the two test halves were calculated. The split-half correlation coefficient was .725 for K and .758 for C. Both correlation coefficients were significant beyond the .01 level.

Using the parallel tests method, the correlation analysis between scores obtained from K and C was performed to obtain additional estimation of the reliability of LCST. The correlation coefficient for the parallel test was significant beyond the .01 level. The overall results from all three methods used to estimate the reliability coefficient of LCST seemed to indicate that the LCST is a reliable instrument for measuring the communication skills of young children, at least for the subjects that served as samples for the present study.

Another question related to the reliability of LCST is "Whether the child's presenter scores is related to his receiver scores?" To obtain empirical data to answer this question, canonical correlation analyses between the presenter scores and the receiver scores were performed. The canonical R was .893, and the chi square test was significant beyond the .01 level, an indication that the child's performance in both roles, the presenter and the receiver, were related. In other words, the results can be interpreted as an indication of the child's performance consistency between the two roles LCST was designed to measure.

To provide further information about reliability of the measures, we also looked into the question of whether the order of presentation made any difference in the presenter scores and the receiver scores. Correlation analysis between the order of presentation and the various LCST sub-scores were calculated, and none of the correlation

coefficients was statistically significant. In other words, the order of presentation did not have significant effect on the scores. This result suggested that the overall LCST scores of the pairs between the two sessions were consistent, there were no fluctuations in time scores between the two sessions. Therefore, we can conclude that no significant practice effect was observed in the scores, and the performance of the pair was not affected by the order in which the particular roles (presenter or receiver) were assigned to them.

To investigate the validity of the LCST, a series of statistical analyses were performed. We first ask the question, "Whether the sub-scores obtained from the verbal protocols of a given task (K or C) are related to the inter-communication scores (the proper placement of the objects on the receiver's picture board)?" To answer this question, a series of multiple correlation analysis were performed. Tables 1 and 2 summarize the results.

A separate multiple correlation analysis was performed for each set of sub-scores, the presenter's sub-scores and the receiver's sub-scores for K and C. The results are summarized in Table 1. The fact that all the Mult. R's for this series of analyses were significant beyond the .01 level, indicated that what the children said was related to their performance on the criterion task. To provide further empirical evidence to support the results reported in Table 1, three additional Mult. R's were calculated between the inter-communication scores and (1) the combined scores of the presenter set for both tasks (C and K); (2) the combined scores of the receiver set for both tasks, and (3) the total sub-scores, presenter and receiver, for both tasks. The results for the multiple correlation analysis are summarized in Table 2. Again, all the Mult. R's

were significant beyond the .01 level. The results, in a way, provided empirical evidence of one aspect of the validity of the LCST. The fact that the sub-scores obtained from the verbal protocols were found to be significantly related to the criterion behavior the test designed to measure indicates that what the children said to each other was significantly related to the joint outcomes being measured by the LCST -- correct placement of the objects on the receiver's picture board.

Another method we used to estimate the validity of LCST was through the use of correlation analyses between the inter-communication scores of LCST and measures of a selected number of student characteristics that have been hypothesized to be related to the children's ability to communicate through the use of language. The results are shown in Table 3. Grade and academic achievement scores were found to be significantly related to the inter-communication scores, while IQ and sex were not significantly correlated with inter-communication scores. These results are in agreement with findings from earlier studies by Krauss et al, (Krauss, R. M., and Rotter, G. C., 1966; and Glucksberg and Krauss, 1969), and furthermore, the results provided some indication of the construct validity of the LCST.

To further investigate the validity of LCST, we studied the discrimination power of the LCST scores with age, as reflected by the grade levels in our case. Analysis of variance between the inter-communication means of each age group was performed. The F test was statistically significant beyond the .01 level. Scheffe's test for multiple comparisons was used to obtain a more refined test of statistic significance of the differences among the means. Among the five different comparisons made, all but the difference between the means of the first grade and the second grade groups were found to be statistically significant.

The overall results seemed to suggest that the LCST is effective in discriminating communication competencies among children of different ages. Since it is a well established fact that age is a good predictor of communication skills in children (Glucksberg and Krauss, 1969; and Flavell et al, 1968), and since the fact the LCST scores were found to be significantly correlated with age (Table 3), and ANOVA of mean scores among age groups were found to be statistically significant, we can conclude that according to our pilot testing results, that the LCST seemed to be a valid instrument.

To further investigate the nature of differences in communication skills among young children of different age groups, we examined their differences in mean and standard deviation of the sub-scores, as well as the criterion scores. As shown in Table 4, no significant differences were observed among different age groups in the sub-scores, "What object" and the greatest differences was found in the "Position" scores between kindergarten and second grade. This result seemed to suggest that children, regardless of their age level, seemed to be able to label and select the appropriate object. However, children from the kindergarten group were less competent in communicating location referents and their ability to ask questions to improve inter-communication. Although there were some differences in the sub-scores between the first grade and the second grade children, the differences were very small. The results seemed to suggest that there are some ceiling effects, either in the LCST's ability to assess second grader's communication skills, or the second grader's

ability to perform the inter-communication task the LCST designed to measure. An interesting trend is noted in the differences between the pair scores and the inter-communication scores across all age groups. Children had consistantly higher pair scores than inter-communication scores.

Item analysis was performed to obtain information about the contribution of each item included in both, the kitchen and the classroom tasks. Percent of passing of each item, as well as the coefficients for the correlation between the sub-scores, and the inter-communication scores and grade levels were calculated, to provide empirical information with which decisions about the inclusion or exclusion of certain items in the final version of the LCST can be made. The results for two items taken from the kitchen task are reported in Tables 5 and 6 to illustrate the type of data we have on each item. The results of item analysis of this kind will enable us to achieve the objective of including as small a number of items as possible, while making sure that the validity and reliability of the instrument are preserved. Percent passing information of the item provided the measures of discrimination power of the item, while correlation results provided information about the relationship between the item and other items included in the task, the contribution the particular sub-score made in the criterion measure of LCST (inter-communication score) and the discrimination power of a particular sub-score and the criterion score among children from different age groups. However, empirical validation study including only the items selected for the final version of LCST is necessary before any statement about the reliability and validity of the final test can be made.

Linguistic Components:

To study the linguistic sophistication of the verbal protocols, the protocols were analyzed on the basis of a selected number of linguistic measures. The means and standard deviation of the linguistic measures for each set of the data (presenter and receiver for K and C) are summarized in Table 7. In comparing the results between the presenter set and the receiver set of both tasks, one is struck with the comparability of linguistic sophistication of the verbal protocol used by the pair of children in transmitting the messages for both tasks. This result provided further empirical evidence for the reliability or the consistency of the measures obtained from the two parallel tasks.

In contrasting the linguistic measures of the two sets, (the presenter set and the receiver set) some interesting phenomenon were observed. The receiver spoke fewer words than the presenter, the words used were shorter (token and type lengths) and the words included in each utterance were fewer. However, they used more different words than the presenter (type token ratio). This result supported the hypothesis we have made about the difference in the nature of the verbal message required of the two roles. The presenter's message was expected to be longer in length (the length of utterance as well as the length of the individual words) since the receiver only needed to say "I am ready", "I found it", or "O.K." if the message transmitted by the presenter was adequate. However, when the presenter's message was not adequate, the receiver was expected to ask different questions varied according to the particular needs of the receiver and the particular inter-communication situation, therefore, the receiver used more different words in asking the questions.

To study the relationship between linguistic sophistication of the verbal protocols, and the inter-communication measures of the LCST, as well as age, correclation analyses were performed. The correlation coefficients are reported in Table 8. In general, linguistic measures such as token, type and sentence length were significantly correlated with the inter-communication scores, while token length, type length and sentence length were related to age. The results shown in Table 8, suggest that the total number of different words and the total number of words and sentence length used in the inter-communication processes were related to the criterion behavior measures by LCST, while the length of the words and the length of the sentence used were related to age.

Measures of linguistic sophistication such as type-token-ratio and Yules K did not seem to have much effect. This result seemed to substantiate findings of Glucksberg and Krauss (1969), the need to differentiate linguistic competency from communication competency. The young child's ability to use verbal skills (language) in a functional setting is not significantly affected by his linguistic competency.

Summary and Discussion

The present study was designed as a pilot study to investigate the effectiveness of a technique, the LCST, developed to assess the communication competencies of young children. The LCST was designed for two children, playing two different roles of a communication task, to jointly solve a inter-communication problem -- successful placement of an object on the receiver's picture board based on the verbal message transmitted by the presenter. The tasks provided a measure for the criterion behavior,

the inter-communication score and the pair score, and measures of component behaviors hypothesized to be related to the criterion behavior. In addition, the tasks also provided measures for evaluating the linguistic quality of the receiver and the presenter's verbal protocols.

Our pilot testing results seemed to indicate that the LCST is a reliable and valid technique to use for assessing the particular component of communication skills the LCST aimed to measure. The results of this study indicated that the outcomes of the inter-communication score obtained from children of similar age range and social backgrounds depend on the quality of the verbal messages transmitted by the presenter, the result of the combined function of both the presenter's and the receiver's verbal communication adequacy, and their ability to assess their inter-communication needs under the social-linguistic situation from which the criterion task was performed.

Results from the multiple correlation analysis between the inter-communication scores and the six sub-scores provided empirical data to demonstrate the close relationships we have hypothesized between the verbal behaviors of the pair and their performance on the criterion task. Our investigation of the relationship between the linguistic measures and the inter-communication measures indicated that inter-communication scores were related to the word-count measures we used to analyze the verbal protocols, but not the linguistic sophistication measures.

An increase with age in the communication proficiency and the linguistic proficiencies as measured by LCST was observed. However, because of the limited age range of the subjects included in our study, and the ceiling effect we have observed in our data with regard to the upper range of the age group, we must consider this finding tentative. In order to further examine the developmental trend in young children's communication skills, we must include subjects of a wider age span. It is our plan to include subjects ranging from age 3 through age 9 in our future study.

The sub-scores that contributed most to the success of the criterion task, were sub-scores related to the position and the location of the object, as well as the receiver's ability to ask questions and the presenter's ability to answer the receiver's questions appropriately. This result supports findings from other studies (Baldwin and Garvey, 1973; Glucksberg and Krauss, 1969; and Flavell et al, 1968), which suggested that the poor inter-communication outcomes may be attributed by the role-taking ability of the pair, or their inability to orient to another person's points of view. For example, a poor presenter may not recognize the fact that the table he has on his board is not on the receiver's picture board yet, and the receiver cannot put the bag of grocery on the table unless he/she tells him to put the table on first. Therefore, even if he presented the message "Put the big brown bag with food in it on the table." the receiver could not have placed the object on the location designated unless he informs the presenter the table is not on his board. If the receiver is a poor communicator, he may very well pick up the object "the brown bag" and put it on the sink counter or wherever it seems to be appropriate.

One of the most exciting findings of this study was in the type of information the LCST scores can yield for studying the differences in the nature and quality of inter-communication processes used by young children. From the data we obtained from LCST, we were able to examine and identify inter-communication characteristics of young children. We found, for example, the poor presenter tended to give non-precise or incomplete messages, the information he provided was usually inadequate for the receiver to use for identification purposes. The poor receiver, in turn, generally failed to seek for further explanation from the presenter when the messages were not clear. The poor receiver attempted, instead, to identify the object or location on which the objects are to be placed on the basis

of inadequate information obtained from the presenter's message, or on the basis of what he perceived the presenter's message should be. On rare occasions, when a question was addressed to the presenter, the presenter would simply repeat the message he originally transmitted.

Based on the preliminary analysis of our data, we can conclude that LCST is not only a noticeably useful technique to evaluate the communication competencies of young children, but most important of all, it can serve as a diagnostic technique to study the relationship of identifying characteristics of competencies that lead to adequate and effective communication, in order to provide and create learning environments and learning experiences condusive to enhance the communication skills of the individual child.

The development of the LCST also served as a prototype for developing other measures to assess young children's communication skills. Since the LCST tasks only included one component of communication skills -- descriptive skills, we plan to use LCST as a model in developing a battery of assessment measures to cover a wide range of skills that are related to the communication competencies of the young child.

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TABLE 1

Multiple Correlation Analyses Between the Inter-communication Scores and the Subscores

Criterion (Communication Score)	Predictors (Sub-scores)	Beta	Structure R	R (Criterion)	Mult. R	Test of Significance	N
1. Presenter - K	What object	.122	.789	.70	.886	< .01	53
	Position	.592	.976	.87			
	What place	.024	.884	.78			
2. Receiver - K	Object selected	-.243	.912	.84	.917	< .01	53
	Placement	.897	.975	.89			
	Questioning	.322	.818	.75			
3. Presenter - C	What object	.585	.981	.96	.982	< .01	57
	Position	.176	.860	.84			
	What place	.267	.963	.95			
4. Receiver - C	Object selected	.207	.854	.69	.791	< .01	57
	Placement	.248	.889	.70			
	Questioning	.431	.913	.72			

Note: K = Kitchen scene
C = Classroom scene

TABLE 2

Multiple Correlation Analyses
Between the Inter-communication Scores and the Subscores for Both Tasks Combined

Criterion (Communication Score)	Predictors (Sub-scores)	Beta	Structure R	R (Criterion)	Mult. R	Test of Significance	N
Presenter	What object	.184	.879	.768	.873	< .01	110
	Position	.425	.929	.811			
	What place	.340	.933	.815			
Receiver	Object selected	.020	.898	.764	.850	< .01	110
	Placement	.554	.952	.809			
	Questioning	.351	.870	.740			
Total	What object	.031	.878	.768	.874	< .01	110
	Position	.196	.928	.811			
	What place	.114	.932	.815			
	Object selected	.004	.095	.083			
	Placement	.006	.120	.105			
	Questioning	.000	.185	.162			

TABLE 3

Intercorrelation Between the Inter-Communication Scores and Selected Measures of Student Characteristics
N = 110

	Variables	Variables					
		1	2	3	4	5	6
	Variables	Grade	Sex	IQ	WRAT (Arith)	WRAT (Read)	Inter-communication Score
1	Grade	1.00					
2	Sex		1.00				
3	IQ	-.26		1.00			
4	WRAT (Arith)	.57		.21	1.00		
5	WRAT (Read)	.44		.44	.76	1.00	
6	Inter-communication Score	.32			.43	.37	1.00

Note: Correlation coefficients significant at and beyond .05 level are included in the table.

TABLE 4

Summary of Test Results

Variables	Age Groups					
	Kindergarten		First Grade		Second Grade	
	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
What Object	9.61	3.86	10.9	3.98	10.79	5.18
Position	3.87	2.56	6.87	3.47	6.83	4.16
What place	6.87	3.96	8.47	4.56	8.86	5.18
Object Selected	10.29	4.05	11.73	4.05	11.29	5.43
Object Placement	8.13	3.95	10.23	3.70	9.36	5.08
Question	6.79	3.39	8.50	3.96	7.81	5.68
Pair Score	7.58	2.93	9.65	3.41	8.93	4.52
Inter-Communication Score	4.40	2.81	6.20	3.08	7.14	4.02

TABLE 5

Examples of Item Analyses Results
(Intercorrelations and Percent of Passing)
N = 48

	Example Item A	Intercorrelation 1 What Object	2 Position	3 What Place	4 Object Selected	5 Object Placement	6 Question	7 Inter-Communication Score	8 Grade	Percent of Passing
1	What Object	1.00								.93
2	Position	.61	1.00							.35
3	What Place	.46	.75	1.00						.67
4	Object Selected	.89	.63	.58	1.00					.94
5	Object Placement	.83	.67	.62	.94	1.00				.71
6	Question						1.00			.27
7	Inter-Communication Score	.77	.63	.58	.87	.82		1.00		.33
8	Grade		.51	.34	.40	.38		.46	1.00	

Note: Correlation coefficients significant at and beyond .05 level are included in the table.

TABLE 6

Examples of Item Analyses Results
(Intercorrelations and Percent of Passing)
N = 48

		Intercorrelation								
	Example Item B	1 What Object	2 Position	3 What Place	4 Object Selected	5 Object Placement	6 Question	7 Inter-Communication Score	8 Grade	Percent of Passing
1	What Object	1.00								.94
2	Position		1.00							.10
3	What Place	.76		1.00						.90
4	Object Selected	.76		.78	1.00					.90
5	Object Placement	.58		.58	.76	1.00				.83
6	Question		.66				1.00			.21
7	Inter-Communication Score					.35		1.00		.38
8	Grade	.29		.39	.39	.30			1.00	

Note: Correlation coefficients significant at and beyond .05 level are included in the table.

TABLE 7

Linguistic Measures of the Protocols

Linguistic Measures	Protocols							
	Presenter				Receiver			
	Kitchen		Classroom		Kitchen		Classroom	
	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
Type	65.60	20.15	64.00	19.18	32.65	17.67	38.27	21.92
Token	241.04	89.11	247.57	100.06	84.35	60.05	96.21	72.19
Type/token	.28	.04	.28	.06	.43	.13	.45	.14
Token length	3.61	.14	3.72	.15	3.57	.38	3.04	.73
Type length	4.33	.17	4.32	.21	3.75	.38	3.56	.37
Yules K	.08	.03	.06	.02	.10	.15	.08	.08
Utterance length	5.56	1.26	6.94	1.49	2.41	.74	.276	.80

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
OFFICE OF EDUCATION
WASHINGTON, D.C. 20202

February 9, 1973

MEMORANDUM TO FOLLOW THROUGH SPONSORS

Subject: Miscellaneous on Testing, Reporting and Fiscal Years 74-76

Enclosed is a copy of a memorandum from Ed Epps (University of Chicago) regarding our meetings last winter about the test battery. Dave Weikart has given some descriptions of those meetings and Ed offered to write up his recollections. The notes are in draft form because other participants are currently being polled regarding their recollections.

Enclosed are test sample recommendations through 1976. These lists are for your reaction.

I noticed that many of you planned to participate in the AERA conference; therefore, I have asked SRI and Abt to be available to meet with you if convenient. On Tuesday evening (8:00 p.m.), I have asked SRI to discuss their final report. This report was due in draft form last June and has been undergoing revision. You should all receive copies prior to AERA week. The meeting place will be my room at the Jung.

Abt Associates will be available to discuss their preliminary report which was due and delivered January 31. I have asked them to distribute the report to you prior to AERA. The meeting with Abt is tentatively set for Thursday, March 1. We can discuss/change that meeting time on Tuesday.

It is time for us to do some advance planning. The sponsor budget implications of any future reduction of classrooms in Follow Through schools must be carefully considered. How will your staffing change if there is only one or two grade levels being served in the schools? How will your experiences be documented so as to leave a lasting history of this operation? Can you anticipate unique service demands in FY's 74-76? Unless we plan now, all we will do is react to what someone else plans for us. Let's talk about this in New Orleans and then get a task force operating.

Garry L. McDaniels, Acting Chief
Research and Evaluation Section
Follow Through Branch
Division of Compensatory Education

Enclosure